

FISHERIES RESEARCH BOARD OF CANADA

Atlantic Biological Station

St. Andrews, N. B.

A. W. H. NEEDLER, *Director*



CIRCULAR

March, 1947

The Prairie "Jigger" For Setting Gill Nets Under Ice

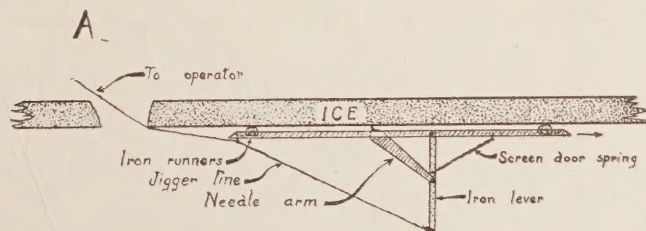
R. A. McKenzie

Where and why the "Jigger" was developed

In the Canadian prairie provinces winter fishing is carried on under the ice with gill nets. Two men working together frequently fish about 4,000 yards of net. To run lines for this amount of gear by pushing a pole with line attached from one hole to another it is necessary to cut a great many holes. Every time the gear is shifted during the season this hole-cutting has to be repeated. So the Prairie province fishermen some years ago developed the jigger which not only saves cutting so many holes but also reduces the time consumed in setting the gear, for it is reported that with the jigger a line can be run 50 fathoms in 3 minutes after the first hole is cut. This device would be useful to many Maritime province fishermen.

The tendency of late years has been to reduce the size of these jiggers in order to make them more easily carried, and the one described here, which was shipped to the Atlantic coast by Dr. K. H. Doan of the Fisheries Research Board's Central Fisheries Research Station at Winnipeg, is one of these smaller recent models.

Construction of the Jigger



The jigger ready for operation.

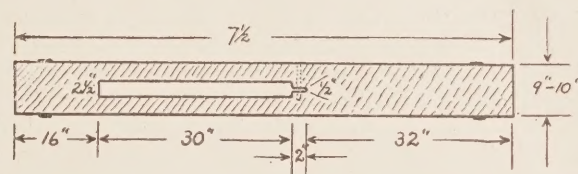
The jigger is shown in diagram A. It consists of a plank from which hangs an iron lever, which operates an arm working through a slot in the plank and pushing the jigger ahead by means of a sharp point which sticks into the ice.

The plank

A dressed plank, cedar preferred, $1\frac{1}{2}$ " - 2" in thickness is bevelled at the ends as indicated in diagram A and has a $2\frac{1}{2}$ " - wide slot cut in it as

shown in diagram B. This slot, through which the

B.



Bottom view

"needle arm" works, has an extension 2" long and $\frac{1}{2}$ " wide in which the lever is pivoted. A hole is bored in, from one edge only of the plank, to the centre of this narrow slot and just beyond it. This hole should accommodate a $\frac{1}{4}$ " to $\frac{3}{8}$ " iron rod to act as an axle for the iron lever.

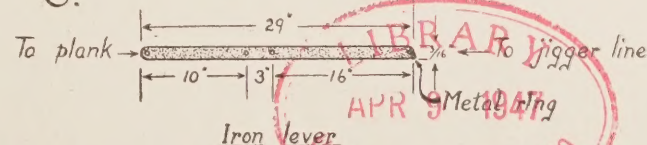
An optional precaution, not on the prairie model, is to fasten strips of galvanized iron along the sides of the slot in the plank. These should hang down for 2" to 3" on the under side of the plank so that the "needle" end of the needle arm has a deeper slot ($3\frac{1}{2}$ " - 5" over all) to work in and is not so liable to slip out of the slot as it sometimes does.

To obtain as much buoyancy as possible the plank should be dried cedar and painted. In this way the maximum pressure against the under surface of the ice is obtained.

The lever

The iron lever is 1" wide, $\frac{3}{16}$ " thick, 29" long, has a $\frac{1}{2}$ " hole close to each end, and two others near the centre of the bar as shown in sketch C. Washers should be placed on the rod which

C.



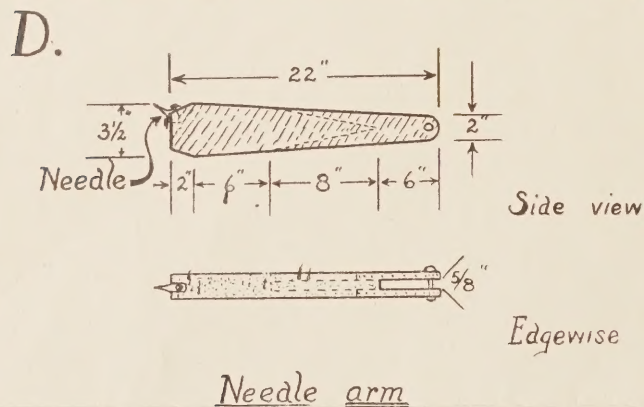
serves as an axle on either side of the lever. The lever should swing quite freely.

The spring

A screen-door spring is fastened in the upper of the two central holes in the lever (see sketch A). With the lever hanging straight down the other end of the unstretched or relaxed spring is fastened forward to a staple on the centre line of the plank. If this is done with a piece of wire or a snap hook it can easily be unfastened, and the lever and needle arm swung together into the slot in the plank when the jigger is being carried about. Earlier models had no spring and depended on the weight of the lever, which was longer and heavier.

The needle arm

The "needle arm", of material about as thick as the plank itself and shaped as in diagram D, has a $\frac{5}{8}$ " slot cut edgewise of the piece back a distance of about 6" from the small end. A bolt hole should be bored through this small end from side to side before the slot is cut. The slot goes completely from edge to edge for a distance of 6" back from the small end and extends from there back about 8" more as a groove on either edge which gradually comes out to the surface as shown in diagram D. This permits the lever and the needle arm to fit closer together. As a precaution against splitting, the two thin pieces of wood on either side of the slot in the needle arm where it is bolted to the lever may



be bound along the edges with narrow bands of galvanized iron. When the needle arm is bolted to the iron lever as in diagram A it should be loose enough to swing quite freely. The needle arm should be of cedar or other light wood, dry and painted, so that when bolted loosely to the iron lever the large free end carrying the needle will float up through the slot in the plank and rest against the under surface of the ice.

The needle

The needle itself may be made of $\frac{1}{8}$ " strap iron about $\frac{1}{2}$ " wide. This should be bent back on itself tightly for 1" to 1 $\frac{1}{4}$ " and the ends bent apart to fit the needle arm as in diagram D. Holes near the end of the arm allow for nailing or screwing the needle to the arm. The tightly bent part of the needle should be sharpened and bent so that, when the arm is in the position as in diagram A, the needle will point directly upwards at right angles to the sur-

face of the plank.

The runners

Iron runners 4" to 6" long and projecting about an inch clear of the upper surface of the plank should be fastened one on either side near the front of the jigger. A single one should be placed on the centre line near the rear end of the jigger. Some fishermen prefer a pair of runners at the rear, the same as at the front, to reduce side-slipping to a minimum. The bearing edge of these runners should be fairly sharp.

The line

Fifty fathoms of 14 to 18-pound tarred cotton line (as used for the "back" or "ground" line in "line-trawling" operations) makes a good jigger line. Six-thread rope is next best. It should be threaded through a large screw-eye or staple fastened in the centre of the under surface of the plank close to the rear end as in diagram A and tied to a ring in the bottom end of the iron lever.

A metal ring should be attached to the lower or free end of the iron lever and the jigger line attached to this ring. If attached directly to the lever the line soon wears and breaks, usually when the jigger is in action under the ice.

Operation

A hole about 1 $\frac{1}{2}$ feet wide and 2 to 3 feet long is needed to put the jigger under the ice. The long way of the hole should point in the direction the line is to be run. When putting the jigger into the hole it is best to haul back on the jigger line until the lever is well back along the plank. If held in this position until under the water a smaller hole in the ice is needed than otherwise. The jigger should be pushed completely under the ice and headed in the proper direction. The jigger line should then be slackened slowly so that the end of the needle arm does not flip out of the slot in the plank as the spring contracts. When it does come out the needle will not come in contact with the ice and the jigger will not work until it is back in place.

When the jigger line is pulled, the needle jabs into the ice and should hold fast. Because of this the plank is pushed ahead. At the end of a 1 $\frac{1}{2}$ ' - 2' pull or stroke the line should be allowed to slide freely through the fingers so that the spring may pull the iron lever down to the vertical position. The free, needle-bearing end of the needle arm then moves forward and upward until the needle rests against the ice farther ahead and is ready for another stroke. A slight pause should be made between strokes to allow time for the needle arm to move into place.

If the plank is painted white and there is no snow it can be seen through a considerable thickness of ice depending on how white the ice is itself. In addition a person walking along the ice over the jigger can tell quite accurately where it is by the sound of the needle jabbing the ice. Jiggers may also be equipped with a clapper device to increase the noise.